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- I. *An Account of the Peruvian or Jesuits Bark, by Mr. John Gray, F. R. S. now at Cartagena in the Spanish West-Indies; extracted from some Papers given him by Mr. William Arrot, a Scotch Surgeon, who had gather'd it at the Place where it grows in Peru. Communicated by Phil. Miller, F. R. S. &c.*

THE Tree from which the *Jesuits Bark* is cut, grows in the Kingdom of *Peru*, in the *Spanish West-Indies*, and is found most commonly in the Provinces of *Loxa*, *Ayavaca* and *Quenca*, which are situated between two and five Degrees of South Latitude. This Tree is tall, and has a Trunk rather bigger than a Man's Thigh, tapering from the Root upwards, has no Boughs or Branches till near its Top, which grow as regular as if lopp'd artificially, and with the Leaves form exactly the Figure of a Hemisphere: Its Bark is of a blackish Colour on the Outside, and sometimes mixt with white Spots, whence commonly grows a kind of Moss, called by the *Spaniards*, *Barbas*; its Leaves resemble much the Leaves of our Plum-tree, of a darkish green Colour on their upper or concave Side, and on their lower or convex Side, reddish: Its Wood is as hard as our common *English Ash*, and rather tough than brittle.

There are four sorts of the Bark of this Tree, to which the *Spaniards* give the following Names, *viz.* *Cascarilla colorada*, or reddish Bark; *amarylla*, yellowish; *crespilla*, curling; and *blanca*, whitish: But

Mr. *Arrot* could only find two different sorts of the Tree, and he believes that the other two sorts of the Bark are owing to the different Climates where it grows, and not to a different Species of the Tree. The Bark called *colorada* and *amarylla*, is the best, and differs from the *blanca* in this, that the Trunk of the former is not nigh so big as that of the latter, the Leaves as described above; whereas those of the *blanca* are larger, and of a lighter green Colour, and its Bark has a very thick spongy Substance, whitish on the Outside, and is so tough, that it requires the Force of an Ax to slice it from the Tree: 'Tis true, indeed, it is as bitter when cut down as the best Sort, and has then the same Effect in intermitting Fevers; but when dry and long kept, turns quite insipid and good for nothing: And it is to be observed, that both Sorts have a much surer and quicker Effect in Cures when green, than when dry. As the bad Sort is in great Plenty, and the best very scarce and hard to be come at, large Quantities of it are cut yearly, and sent with a little of the fine Bark to *Panama* for *Europe*.

The Tree of the *crespilla* is the same with that of the *amarylla* and *colorada*, but grows in a cold frosty Climate; by which means the Bark is not only alter'd in its Quality, but is also whitish on the Outside, though cinamon-colour'd within, and ought in Medicines to be rejected. This Sort and the *blanca* grow plentifully in the Province of *Ayavaca*, 50 Leagues from *Piura*, and 62 from *Payta*, a Port in the *South-Sea*; as also in *Cariamango*, *Gonsonama* and *Ximburo*, whence they commonly send it to *Payta*, and there sell it as the best. The *blanca* likewise grows in the Province of *Quenca*, and in the Mountains of *Caxamarea*:

Caxamarea: But the true and genuine fine *Jesuits Bark*, which is of a reddish or yellowish Colour, is only found from five to about fourteen Leagues round the City of *Loxa*, in the Province of *Loxa*, called generally by the *Spaniards*, *Provincia de las Calvas*. This City is situated between two Rivers, that run into the great River *Marañon*, or of the *Amazons*, and lies about an 100 Leagues from *Payta*, and in a direct Line about 110 Leagues South-East from *Guayaquil*, though by the common Road near 200. The Places about *Loxa*, where this fine Sort is found, are, *La Sierra de Caxanuma*, *Malacatos*, *Yrutasinga*, *Tangana*, *Mansanamace*, *La Sierra de Boqueron*, and a Place called *Las Monfas*.

The Bark Trees do not grow all together in one Spot, but intermixt here and there with many others in the Woods; it happens, indeed, sometimes, that Clusters of them are found together, though at present they are much scarcer than in former Times, a great many of the fine large Bark Trees having been entirely cut down, that their Bark might the more easily be sliced off.

The Soil where the best Sort thrives, is generally in red clayey or rocky Ground, and very frequently on the Banks of small Rivers descending from high Mountains.

That this Tree flourishes and bears Fruit at the same time all the Year round, is certainly owing to the almost uninterrupted Rains, that fall in those high Mountains where it grows, which continue with little or no Intermision: Although about three or four Leagues down in the low Country, where it is excessive hot, there are wet and dry Seasons, as in other hot Coun-

tries, the Rains beginning in *December* and ending in *May*; this Season the *Spaniards* who live there call *Temporal*, and it is general all thereabouts; whereas what they call *Paroma* is a cold rainy Season that lasts in all the mountainous Places of these Countries from *June* to *November*, but especially in the City of *Loxa* and Places adjoining, where Mr. *Arrot* has pass'd 25 or 30 Days without seeing the Sun once, and felt the Air so extremely cold, that he was obliged always to be wrapped up in his Cloak, and to be in continual Motion to keep himself warm. Such excessive Cold so near the Line, appears to *Europeans* incredible; but many Places in these Latitudes are so, by their Situation and Vicinity to high Mountains.

The properest Season for cutting the Bark is from *September* to *November*, the only Time in the whole Year of some Intermiſſion from Rain in the Mountains. Having discover'd a Spot where the Trees most abound, they first build Huts for the Workmen, and then a large Hut wherein to put the Bark, in order to preserve it from the wet; but they let it lie there as short time as possible, having before-hand cut a Road from the Place where the Trees grow, through the Woods, sometimes three or four Leagues, to the nearest Plantation or Farm-house in the low Country, whither, if the Rain permits them, they carry the Bark forthwith to dry. These Preparations made, they provide each *Indian* (they being the Cutters) with a large Knife, and a Bag that can hold about 50 Pounds of green Bark: Every two *Indians* take one Tree, whence they cut or slice down the Bark, as far as they can reach from the Ground; they then take Sticks about half a Yard long each, which they tie to the Tree with
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tough Withs at proper Distances, like the Steps of a Ladder, always slicing off the Bark, as far as they can reach, before they fix a new Step, and thus mount to the Top, the *Indian* below gathering what the other cuts: This they do by Turns, and go from Tree to Tree, until their Bag is full, which, when they have plenty of Trees, is generally a Day's Work for one *Indian*. As much Care as possible must be taken that the Bark is not cut wet; should it so happen, it is to be carried directly down to the low Country to dry; for otherwise it loses its Colour, turns black, and rots; and if it lie any Time in the Hut without being spread, it runs the same Risque: So that while the *Indians* are cutting, the Mules (if the Weather permits) ought to be carrying it down to the Place appointed for drying it, which is done by spreading it in the open Air, and frequently turning it.

Mr. *Arrot* had the Curiosity to send above 50 *Se-rooms* from the Woods to the City of *Loxa*, where he put it into a large open House, and dried it under Cover, never exposing it either to the Sun or Night Air, imagining that the Sun exhaled a great many of its fine Parts, and that the Night Air, or *Serene*, was very noxious to it; but he found the Colour of the Bark thus cured, not near so bright and lively as that dried in the open Air. He is of Opinion, that a very short Time will put an End to this best Sort, or, at least, it will be extremely hard to be got, by reason of its Distance from any inhabited Place, the Impenetrability of the Woods where it grows, and the Scarcity of the *Indians* to cut it, who, by the *Spaniards* hard Usage and Cruelty, are daily diminishing so fast, that in a very
few

few Years their Race in that Country will be quite extinct.

Mr. *Arrot* says, that the small Bark which curls up like Sticks of Cinamon, (and which in *England* is much esteem'd, as being cut off the Branches, and therefore reckoned better and more effectual in curing Fevers) is only the Bark of the younger Trees, which, as it is very thin, curls in that manner; and that the Bark of the Branches would not compensate the Trouble and Expences of cutting. He also told me, that after the Bark is cut off any Tree, it requires at least 18 or 20 Years to grow again; which is directly contrary to what Dr. *Oliver* says in N^o 290. of the *Philosophical Transactions*. He added besides, that its Fruit is no ways like a Chesnut, as the Doctor informs us in the same Paper; but rather like a Pod, which incloses a Seed somewhat like a Hop-feed, and that he had sent some of them to *England*.

He could not tell me by what Artifice or Stratagem the *Jesuits* have got this Bark to be called after them, if not that they carried it first into *Europe*, and gave themselves out as the first Discoverers of its Virtues: But he assured me, that the current Opinion at *Loxa* is, that its Qualities and Use were known by the *Indians* before ever any *Spaniard* came among them; and that it was by them applied in the Cure of intermitting Fevers, which are frequent over all that wet unhealthy Country.